

PLAN INTERNATIONAL AUSTRO
Cuenca, Ecuador

REPORT OF THE
CHILD SURVIVAL X PROJECT
FINAL EVALUATION

Presented by:

Lynn Johnson, MPH
Brian B. Johnson, MA, MPH

September 1997

ACKNOWLEDGEMENTS

The evaluators wish to express their thanks to Marco Freire and the staff of PLAN International Austro for the work they did in preparing for this final evaluation, and for their assistance during the entire evaluation process.

The participation of PLAN staff members Gladys Illescas, Nely Saguay, Met-y Coronel, Lucia Ortiz, Diana Barzallo, Maria Estrella and Melania Ordóñez in both the field visits and analysis sessions was most helpful. In addition, Ministry of Health representative Blanca Bermejo, and Lupe Izquierdo of Rural Social Security were valuable assets during the entire evaluation process.

We would also like to thank Joseph Valadez, Health Program Coordinator of PLAN International Headquarters, Luis Tam, PLAN Regional Health Coordinator, and Santiago Davila, Ecuador Country Health Coordinator for their participation and valuable contributions, during different phases of the evaluation process.

Lynn Johnson
Brian B. Johnson
Cuenca, Ecuador
September 1997

ABBREVIATIONS AND ACRONYMS

USAID	U.S. Agency for International Development
BCG	Bacille Calmette-Guerin (tuberculosis vaccine)
CHW	Community Health Worker
CDD	Control of Diarrheal Diseases
c s	Child Survival
DIP	Detailed Implementation Plan
DPT	Diphtheria-tetanus-pertussis Vaccine
EPI	Expanded Program on Immunization
HIS	Health Information System
IMCI	Integrated Management of Childhood Illness
KPC	Knowledge, Practice and Coverage
MOH	Ministry of Health
MTE	Mid-Term Evaluation
NGO	Non-governmental Organization
OPV	Oral Polio Vaccine
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
PVO	Private Voluntary Organization
SICOS	Community Health System
TT	Tetanus Toxoid
TTV	Tetanus Toxoid Vaccine
UNICEF	United Nations Children's Fund
WHO	World Health Organization

PLAN INTERNATIONAL AUSTRO
CUENCA, ECUADOR

CHILD SURVIVAL X PROJECT FINAL EVALUATION

TABLE OF CONTENTS

Acknowledgements	i
Abbreviations and Acronyms	ii
Table of Contents	iii

1	Summary and Recommendations	1
2	Introduction	4
3	Recommendations of the Mid-Term Evaluation	7
4	Capacity Building and Sustainability	12
5	Project Interventions	16
6	Issues Identified by the Evaluation Team	39
7	Innovations and Lessons	42
8	Achievements and Constraints	43

ANNEXES

A	Evaluation Team Members
B	USAID Final Evaluation Guidelines
C	Qualitative Methodology Outline and Data Collection Instruments
D	KPC Survey Methodology, Questionnaire and Report
E	List of Contacts
F	Summary of Recommendations of the Mid-Term Evaluation
G	Sustainability Plan
H	Success Stories

1

SUMMARY AND RECOMMENDATIONS

1.1 Evaluation Overview

The purpose of the Final Evaluation of PLAN International Austro Child Survival X Project is to review progress toward project objectives, identify constraints to the achievement of the objectives, and recommend possible courses of action to enhance the sustainability of project interventions. The results of this evaluation are important to PLAN Austro, since the project staff will continue to provide educational and technical services to the MOH and beneficiary communities, and to support the cadre of community health workers. In addition to the CS interventions, a reproductive health component will be added over the course of the coming year. The evaluation took place during the 36th month of project implementation, from September 3 to 11, 1997, in the city of Cuenca, Ecuador, with visits to communities in the provinces of Azuay and Cañar.

A Knowledge, Practice and Coverage (KPC) Survey was carried out in September 1997, which provided the evaluation team with quantitative data. Qualitative information was provided through focus group discussions and structured interviews. The majority of these occurred during visits to project communities and referral health facilities: field visits and observations were made to 11 communities, and five MOH Health Sub-centers in the two provinces where the project is implemented. Structured interviews were held with community leaders, health volunteers, MOH hospitals and Sub-centers.

The evaluation team later held structured meetings to analyze the quantitative and qualitative information as regards project interventions, and to study implementation, management and sustainability issues. Finally, a meeting was held to summarize the results and conclusions and to document key recommendations. A sustainability plan was prepared to ensure the continuity of project benefits, now that the USAID funded CS Project is over.

1.2 Main Achievements and Constraints

Achievements

Through its education efforts, the PLAN CS Project increased knowledge indicators in the areas of nutritional improvement and growth monitoring, control of diarrheal diseases and pneumonia control. Feeding practices have improved, with significant progress in early and exclusive breastfeeding over the life of the project. Growth monitoring frequency has more than doubled since the project began: a rise from 21.7 % to 52.7 % among children 0-23 months of age. Use of ORS packets during episodes of diarrhea has seen an increase of 30% during the course of the interventions, and goals were exceeded in regards to knowledge among mothers of the danger signs of severe diarrhea. Concerning pneumonia control, knowledge levels of the danger

signs have increased significantly among mothers, and 80.8% take their children directly to a health services facility during a suspected pneumonia episode, up from a starting point of 44.8 % .

One of the most important achievements of the project is the development of a strong health team, whose members are dedicated and hard working. The Mid-Term Evaluation recommendations were followed very closely: a Plan of Action was developed, was strictly followed by the Health Team during the past 14 months, and the result is the successful expansion of all four project interventions, from 20 to a total of 130 communities.

Constraints

There has been little progress in regards to the project interventions concerning immunizations: most vaccine levels have remained statistically static, and none of the original DIP objectives has been met. The percentage of mothers immunized with at least two doses of tetanus toxoid vaccine is particularly low, 9.0 % , with an original goal of 40% coverage.

Related to these issues, the project suffered difficulties with tracking and analyzing the results of the interventions. The health information system has improved greatly since the previous year, but is still not adequately utilized; for example, in following vaccination trends, and in undertaking long planned, long needed and long postponed anthropometric investigations.

Utilization of the community health workers for both diarrhea cases (17.1%) and pneumonia control (12.3 %) is very low, indicating possible problems with the human resource in whom a great deal of time and effort has been invested.

The main constraints faced by the project were the result of an overly ambitious project design, and a new health team with little or no previous experience in the management of a child survival project. The project design called for the implementation of four child survival interventions in 147 disperse rural communities, which proved too exhausting to successfully meet many goals.

1.3 Conclusions Regarding Capacity Building and Sustainability

PLAN has a number of key counterparts, which guarantees a good degree of continuity: the Ministry of Health, Rural Social Security, the local university and the communities themselves are the most important partners, which work in close coordination with the project. Through a series of training events during the life of the project, technical skills and management expertise has been enhanced among all of the players concerned, and sustainability will be strengthened through the transfer of a number of project activities to the MOH and the University of Cuenca; for example, CHW supervision and educational message development (IEC) concerning the key interventions.

The main mechanism for cost recovery has been through the sale of essential medicines and provision of first aid by the CHW at the community health post. However, this system could be strengthened in the future, in order to better function as an incentive for the CHW. One possibility is the RSS's interest in promoting community pharmacies, which would include more training for CHWs and allow them to earn more money.

1.4 Key Recommendations

Following is a summary of the key recommendations. Detailed descriptions of these may be found in Chapters 5 and 6 of this report.

1. Promote greater inter-institutional cooperation between PLAN, MOH personnel and the community, including training activities and the formulation of a detailed and long term Action Plan.
2. Further promote the use of the community health post by increasing contact between mothers and CHWs, in order to provide routine services and essential items, such as ORS packets.
3. Design and initiate a detailed ethnographic investigation of the project communities, in order to better understand local cultural concepts which may affect intervention success or failure.
4. Strengthen the efficiency of the health information system, to better document changes and trends over time.
5. Undertake an appropriate anthropometric study to obtain accurate nutritional status baseline information; specifically, data should be collected for different levels of malnourishment. It will then be more feasible to formulate more appropriate objectives for the future.
6. Strengthen the strategy to support both the MOH and local CHWs through education, promotion, tracking activities, transport and supplies, in order to improve vaccination coverages.
7. Tetanus toxoid vaccination coverage especially should be intensified, through such strategies as maintaining supplies, more educational sessions, promotion of health card use and a closer collaboration with the MOH regarding differing criteria.
8. Increase the education and training coverage with an intensive focus on pneumonia control into more communities, including enhanced supervision of CHWs, and greater educational opportunities for both these and also mothers.

2 INTRODUCTION

2.1 Background

PLAN International Cafiär, located in southern Ecuador, has been active in the provinces of Cafiär and Azuay since 1986. The original Field Office was located in the town of Azogues, but has since been moved to the city of Cuenca. The Cuenca office has combined the former field offices of Cafiär and Loja into a new office titled PLAN Austro. Therefore, the implementing institution of the Child Survival Project will be referred to as PLAN Austro in this document, rather than PLAN Cafiär.

PLAN's goal in the health sector is to provide Child Survival programs worldwide that are consistent with UNICEF GOBI standards and comprehensive primary health care services. Elements include growth-monitoring, oral rehydration therapy, breast-feeding, and immunization coverage. The "Growing Up Healthy" domain, as articulated by the PLAN South American Regional Office (SARO), seeks to ensure the survival, protection and healthy development of children; in addition, there exists a focus on reproductive health for adolescents and adults, especially women of childbearing age.

PLAN Austro selected two external evaluators with experience in USAID funded Child Survival projects in Central and South America: Lynn Johnson and Brian B. Johnson. In addition, Joseph Valadez, the Health Program Coordinator for PLAN International Headquarters, participated in the majority of the evaluation activities; Luis Tam, the PLAN Regional Health Coordinator, and Santiago Dávila, Ecuador Country Health Coordinator, attended the debriefing session. The evaluation team was comprised of two MOH representatives, one representative from the Rural Social Security Office, and the PLAN Child Survival Project staff. (See ANNEX A for a list of the evaluation team members.)

In October 1994, PLAN was awarded a three-year Child Survival grant (CS-X) with a total estimated budget of \$409,698. Field costs account for 82.5 % of the total. 75 % of the budget is provided by USAID and the remainder is provided by PLAN.

The present Final Evaluation takes place during the 36th month of project implementation. The evaluation took place from September 3-11, 1997 in the city of Cuenca, Ecuador, with visits to communities in the provinces of Azuay and Cafiär. The purpose of the final evaluation was to review progress toward project objectives, identify constraints to the achievement of the objectives, and recommend possible courses of action to enhance the sustainability of project interventions. The results of this evaluation are important to PLAN Austro, since the project staff will continue to provide educational and technical services to the MOH and beneficiary communities, and to support the cadre of community health workers. In addition to the CS interventions, a reproductive health component will be added over the course of the coming year.

2.2 Project Description

The Child Survival Project is located in rural areas of the Ecuadorian Andes, in the provinces of Azuay and Cañar. The project target area encompasses 147 communities located in the cantons of Azogues, Biblian, Cañar, El Tambo, Paute and Sigsig. The principal economic activities are farming and craftsmanship, both subject to fluctuating markets and commercialization through intermediaries, resulting in inadequate income and increasing rates of rural-urban migration. In addition to economic constraints, these rural communities lack adequate infrastructure: 28 % lack electricity, 70 % have no sewage systems, and only 40% of the communities have access to potable water systems (Ecuadorian National Census 1992).

The target area population is mestizo from Spanish/Quichua origin. Most are Spanish speaking or bi-lingual. According to a study undertaken by PLAN in 1990, 31.5% of mothers are illiterate. The project site was selected due to the high levels of infant mortality (53 per 1,000 live births) in the sierra region of Ecuador, and the ineffectiveness of Ministry of Health services to reach the most needy groups.

PLAN has identified a target population consisting of 27,500 direct beneficiaries: children 0-11 months = 1,850; 12-23 months = 1,788; 24-59 months = 5,364; women 15-44 years = 14,798; and new births = 3,700 (Ecuadorian National Census 1992).

The project design seeks to strengthen local health systems, with emphasis on community participation in health decision making. Project efforts are focused primarily on three interventions: control of diarrheal disease, pneumonia control, and growth monitoring and nutrition. The project supports the expanded program of immunizations (EPI) sponsored by the MOH, by providing supplies, transport and equipment.

The project design includes four complementary strategies to achieve Child Survival objectives: 1) strengthening the capacity of the MOH to provide effective services using additional resources and enhanced management systems; 2) community outreach through a cadre of trained community health workers (CHWs); 3) development of the communities' technical and managerial capacity to analyze data, and to plan, implement and evaluate activities; and 4) development of programmatic links between MOH facilities and communities to foster joint responsibility for Child Survival activities.

Local communities play an active role in the provision of basic preventive and curative services, through the selection of CHWs, who in turn offer education and first-line services in the four interventions: CDD, pneumonia control and GM/P. Each community has a community health post which provides oral rehydration therapy (ORT), first aid, and provision of essential medicines at cost. Community representatives participate in meetings at the MOH Sub-Center, where Child Survival activities are jointly planned, implemented and evaluated.

The project design calls for close coordination with the MOH to develop standardized systems for supervision, training, referral and logistics. The CS Project staff works directly with MOH Sub-Centers and communities to provide technical and managerial support. PLAN also provides equipment and supplies to improve the quality of health services at the Health Area and Sub-Center levels.

2.3 Evaluation Methodology

The evaluation responds to the USAID “1997 Final Evaluation Guidelines” (ANNEX B). Based on these requirements, the evaluation team prepared an evaluation schedule and data collection forms for the qualitative investigation component (ANNEX C).

A Knowledge, Practice and Coverage (KPC) Survey was carried out in September 1997, which provided the evaluation team with quantitative data. (See ANNEX D for the KPC Survey Methodology, Questionnaire and Report.) Qualitative information was provided through focus group discussions and structured interviews; instruments developed for the collection and analysis of data are included in ANNEX C. The majority of these were used during the visits to project communities and referral health facilities. Three teams were formed to conduct the community visits; field visits and observations were made to 11 communities, and five MOH Health Sub-centers in the two provinces where the project is implemented. Structured interviews were held with community leaders (**FORM 1**), health volunteers (**FORM 2**), MOH hospitals and Sub-centers (**FORM 3**). The teams interviewed a total of 22 CHWs, 9 MOH staff, and approximately 40 community leaders in the 11 communities visited. (See ANNEX E for the list of contacts.)

The evaluation team held structured meetings to analyze the quantitative and qualitative information as regards project interventions, and to study implementation, management and sustainability issues. Finally, a meeting was held to summarize the results and conclusions and to document key recommendations. A sustainability plan was prepared to ensure the continuity of project benefits, now that the USAID funded CS Project is over.

3

RECOMMENDATIONS OF THE MID-TERM EVALUATION'

3.1 Project Design

The recommendations of the Mid-Term Evaluation (MTE) regarding project design suggested directing efforts towards developing Child Survival interventions in four phases: 1) intensive intervention; 2) follow-up and maintenance activities; and 3) increasing involvement of the MOH in implementation, supervision and decision making; and 4) community empowerment. The project was advised to concentrate on 130 communities with the support of four Nurse Coordinators and two Tutor/Supervisors. The evaluators also suggested that PLAN Austro present a follow-on proposal.

Shortly after the MTE, the PLAN Austro Field Office Health Team prepared a Plan of Action addressing the recommendations of the MTE. This plan was carried out, and as a result, the CS project has been successful in reaching mothers and children under two years of age in 130 dispersed rural communities with basic interventions for integrated child health care. The project design in the DIP ambitiously targeted 147 rural communities. As a result of the analysis sessions during the MTE, the CS Project decided to transfer 17 communities to the MOH, due to the fact that they had easy access to health services and a better socio-economic level than the rest of the communities. The project continued to support the MOH with training, supplies, and equipment for the Sub-Centers which served these communities.

Forty percent of the Community Health Systems (SICOS) and their respective communities are now in the empowerment phase of the four stage plan. The remainder will continue to be served by the project in one or more of the following three areas: child survival, reproductive health, child-to-child program. See the new sustainability plan in ANNEX G, which shows the status of project communities regarding the type of support and specific interventions they will receive.

The PLAN Austro Health Team held bi-monthly planning sessions and meetings every two weeks to monitor the progress of the Action Plan. This strategy has helped the project to focus on the DIP objectives, pinpoint and analyze problems, take necessary action, and effectively allocate human and material resources. The progress of the Action Plan was enhanced by substantial technical support from PLAN's Regional and International Offices. The Health Coordinator for PLAN IH made two, two-week trips to the project site, the Regional Health Advisor made several visits of 2-4 days each, and the National Health Advisor visited the project every two months.

See ANNEX F for a summary of the recommendations of the Mid-Term Evaluation.

PLAN Ecuador decided to not request an additional three-year grant from USAID. PLAN will continue to support project activities using funds from the Austro Field Office budget.

3.2 Human Resources

The recommendations made during the MTE state that: 1) a nurse/manager be hired to make for more efficient project management; 2) excellent CHWs be named as CS Facilitators and Tutors to help cover the 130 communities with support in the four interventions and supervision activities; and 3) CHWs should make regular home visits to mothers of children under two years of age, and receive training in the procedures to be followed during each visit.

Several actions have been taken in response to the above mentioned recommendations. First PLAN Ecuador hired a Country Health Coordinator, Dr. Santiago Davila, who has been providing technical assistance to the project since November of last year. Second, PLAN Austro hired a Nurse/Manager, Gladys Illescas, to assist in project management, supervision of field staff, implementation of the supervision system for CHWs and the project's health information system (HIS), plus inter-institutional coordination. Third, three Tutors were hired and 23 Facilitators were named to strengthen field activities, especially in the follow-up and maintenance phases mentioned in Section 3.1 of this chapter. And fourth, Tutors, Facilitators, and PLAN/MOH staff were trained (formally or on-the-job in the case of volunteers), in implementation and supervision activities, using the revised standards prepared after the MTE.

3.3 Supervision

The MTE recommended that the project develop a supervision system for project staff, and that performance standards be outlined and agreed upon for each member of the Health Team. Regular contacts between supervisors and those under their supervision should provide performance evaluation, on-the-job education, administrative support and counseling.

Several actions were taken in accordance with the above mentioned recommendations. The Nurse/Manager developed job descriptions, performance standards and supervision check lists for project staff and Tutors. Internal supervision was enhanced by monthly meetings between the PLAN Austro Field Office Manager and the CS Health Coordinator, and through technical support provided by PLAN's national, regional and international health coordinators (see Section 3.1 above).

As a result of the above, the CS Project has improved supervision of both CHWs and project staff. Procedures for home visits and supervision have been implemented in all project communities. The project's use of CS Facilitators and Tutors has helped to expand work to a majority of the target zone. The project will continue to strengthen the bimonthly meeting at the Sub-Center, as an opportunity to involve MOH staff in training and supervision of CHWs.

The project has followed the recommendations regarding delegation of responsibilities by the CS Coordinator, and improved time management. The evaluators were impressed with the organization and efficiency portrayed by the PLAN Austro Health Team: the addition of an excellent administrative assistant, plus the new Nurse/Manager, has freed the CS Coordinator and Nurse Supervisors from administrative tasks, enabling them to dedicate more time to project implementation.

3.4 Management and Use of Data

The MTE recommended that PLAN assist the MOH by consolidating community data on EPI-INFO and presenting a monthly report, which would provide information for decision making, not only for the MOH but for PLAN Austro as well.

In response to this recommendation, the CS Project hired an external consultant, Brian Johnson, to provide technical support in the computerization of the HIS and to train the project staff in the use of the EPI-INFO software package. The project staff prepared a revised list of key process indicators for project monitoring, and a revised set of HIS forms based on simplicity and user-friendliness.

3.5 Sustainability

Key recommendations included: 1) orientation for community leaders regarding health issues; and 2) clarification of the name of the bimonthly MOH Sub-Center meeting for CHWs and MOH staff, its frequency, participants and purpose in order to standardize the functioning of this committee.

The project has provided training to the MOH Sub-Centers regarding the functioning the SICOS. The meeting of the SICOS, which takes place at the MOH Sub-Center every two months, is known as an Information Analysis Meeting (RAI). The functioning of the SICOS is being strengthened by the CS Project, and the MOH Sub-Centers are not only familiar with the terminology and purpose, but also are taking responsibility for the development of their community health system.

The project prepared written standards for the correct implementation of the bimonthly RAI, meetings and also the community health meetings. To promote fuller participation of community leaders, five training events concerning the Integrated Management of Childhood Illnesses (IMCI) and the role of leaders in health projects were held. Over 130 leaders attended, and were encouraged to coordinate with CHWs to undertake local health activities.

3.6 Technical Interventions

The MTE indicated that although coverage rates for growth monitoring and nutrition had generally surpassed project goals, the scope of the EPI, CDD and pneumonia control interventions needed to be expanded. Project staff should maintain growth monitoring activities at their current level and concentrate efforts on areas not fully implemented to date.

The CS Project carried out a series of activities to improve the quality of the technical interventions. For example, training was given to CHWs in the IMCI methodology, and supervision by Nurse Coordinators and Tutors regarding home visits was improved. New training materials were also developed: a poster about IMCI and a pamphlet with instructions on the four project interventions. ORS packets were obtained and distributed to mothers. CHWs in remote communities were trained and supplied for the antibiotic case management of pneumonia, and twenty MOH facilities were provided with materials from PAHO for pneumonia case management.

Following are specific comments on each of the interventions; detailed analyses of each may be found in Chapter 5.

Immunizations (EPI)

The MTE provided specific suggestions for strengthening the MOH's immunization program. The CS Project has intensified education regarding immunizations and tracking of newborns by CHWs. However, the results from the KPC Survey show that only 57.7% of children age 12-23 months have complete coverage, and rates for individual antigens have not increased substantially since the MTE.

The MTE recommended that the project assist the MOH to increase the percentage of women age 15-49 years with at least two doses of TT. The CS Project did follow the recommendations of the MTE regarding the printing and provision of maternal health cards, tracking of eligible women in communities considered high risk for neonatal tetanus by the MOH, and providing education regarding the importance of TT coverage. As a result the percentage of women with at least two doses of TT increased from 2.4 % to 9.0 % .

Control of Diarrheal Disease (CDD)

The CS Project carried out the recommendations of the MTE, including: improved distribution system of ORS packets by CHWs; provision of two ORS packets to mothers of children under two years of age, and follow-up on their use during home visits by CHWs; and education to mothers regarding recognition of danger signs of dehydration. The KPC results show overall improvements in management of diarrhea cases by mothers, and in recognition of six danger signs.

Nutritional Improvement and Growth Monitoring

The MTE recommended the following: 1) improve nutritional status of children 0-23 months and increase coverage of bimonthly growth monitoring, 2) do an anthropometric study to obtain accurate nutritional status baseline information, 3) obtain technical assistance on how to tabulate and process the anthropometric data, 4) include a process indicator on the number of children who show no weight gain, 5) expand home visits utilizing standardized procedures to ensure quality; 6) expand the use of a community register to track malnourished children; and 7) place a community map on the wall of the community health post and be updated on a regular basis.

The CS Project expanded coverage of bimonthly weighing sessions to more communities, including use of a community map, home visits and registration of mal-nourished children. Technical assistance was provided regarding the use of EPI-INFO to process anthropometric data; however, the project has not yet undertaken an anthropometric study to obtain needed baseline data.

Pneumonia Control

The CS Project has implemented all of the recommendations for pneumonia control including: 1) education and supervision of CHWs in 130 communities; administration of antibiotics by CHWs for cases of probable pneumonia and evacuation plans posted in the health post in remote communities; distribution of procedures manuals to MOH Sub-Centers; and training events for MOH staff. The 1997 KPC Survey shows increases in both recognition of danger signs for pneumonia and referrals to health services since the baseline (1994).

Remote communities were given a megaphone to facilitate the evacuation process, and two lives were saved due to the use of antibiotics and the evacuation plan. PLAN Austro sponsored several training seminars on pneumonia control using the IMCI approach, which teaches practitioners how to evaluate and diagnose a sick child, provide adequate treatment, and give the education to caretakers. Courses were given to 50 MOH physicians, 6 nurses, 94 CHWs, 35 CHW Facilitators, 26 community leaders and the members of the PLAN Austro Health Team.

CAPACITY BUILDING AND SUSTAINABILITY

4.1 Relationship to Private and Public Sector Health Activities

The key counterparts to PLAN's CS Project are the Ministry of Health and Rural Social Security, both of which operate Health Sub-Centers in rural areas. The project coordinates activities with the University of Cuenca and APS, a primary health care project funded by the Belgian government through the MOH. The Sub-Centers provide referral services and are responsible for the functioning of the SICOS. Through the bimonthly meeting between health personnel and CHWs, community members are linked directly to the health care system. The purpose of the meeting is to analyze coverage data, discuss problems, plan activities, and promote health improvements in each SICOS. Joint activities between the CS Project and the above mentioned institutions have been training events in the four project interventions, implementation of the IMCI strategy, sustainability of project benefits, supervision of MOH Health Areas, referred to as local health systems (SILOS) and Health Sub-Centers, called community health systems (SICOS), and provision of equipment to health facilities.

To facilitate inter-agency coordination regarding the IMCI approach, a national committee was formed including representatives from PAHO/WHO, the MOH, BASICS Project, CARE, and UNICEF. In the project area PVOs, NGOs and public sector institutions meet to coordinate the IMCI approach. The inter-institutional focus for the implementation of IMCI has provided a forum for coordination and collaboration among the different health related agencies.

4.2 Sustainability Status

PLAN Austro will continue to support child survival activities in the project area. Most (if not all) of the project staff will be kept on, and the four CS interventions will be strengthened, along with the management systems. The project has plans to transfer 74 communities to the MOH, and to add 73 new communities, maintaining the target number at 147. A reproductive health component will be added during the coming year, and PLAN will be active in training MOH personnel, CHWs, and community members.

In the areas to be transferred to the MOH, PLAN Austro will continue with the following activities: training, provision of basic supplies for community health posts, and monitoring and supervision of SICOS. For the areas which will be directly involved in project activities, the following will be done: implementation of the four interventions; maintenance of information, supervision, training, and logistics systems; training and follow-up of CHWs; and participation in bimonthly SICOS meetings.

Sustainability of project activities will be enhanced by a new agreement between PLAN Austro and the University of Cuenca, with the Schools of Medicine and Nursing. The education specialist will be located at the University and will work with their IEC department in the development and diffusion of educational messages about health. The CS Project will accept students who wish to do their thesis on a topic of interest to the project, thus increasing operational research with potential benefits to project implementation.

4.3 Capacity of Local Partners

The CS Project has contributed to the capacity of local partners through the development of a cadre of CHWs who are linked to the MOH system through the bimonthly SICOS meeting. Over the years, PLAN Austro has gained the respect and confidence of the communities, especially since PLAN implements other projects in rural areas, including training of leaders in project design, implementation and evaluation.

Training events during the life of the project for health personnel from the MOH and Rural Social Security (RSS), have helped develop technical skills and expertise in the management of local health systems. Training has been provided on each of the four interventions, the IMCI approach, and the development of local health systems. PLAN will continue to work with and support these key counterparts, and to foster primary health care initiatives, such as the new reproductive health component.

During the coming year, the capacity of local partners will be strengthened with the seconding of four PLAN Nurse Supervisors to different MOH Sub-Centers, and the placement of the education specialist at the University of Cuenca School of Medicine.

4.5 Community Participation

The beneficiary communities participated in the design of the project through the community planning process used by PLAN Austro. PLAN assists each community to make a preliminary diagnosis based on a visioning process, followed by the definition of priority areas of intervention. A three-year integrated development plan is then formulated by the community and presented to PLAN and other organizations for funding. Results are evaluated jointly by PLAN, the communities, and other participating institutions. Child survival activities are incorporated within the existing integrated development framework. The SICOS meetings provide a mechanism for joint planning and coordination of health activities between community members and health care providers.

The communities have played an active role in the provision of first-line health services, through the work of CHWs. The communities have established local health posts, which are managed by the CHWs, and provide ORT, first aid, and provision of essential medicines at cost. Representatives from each community participate in the monthly SICOS meetings where Child Survival activities are jointly planned, implemented and evaluated.

In addition to the cadre of CHWs, 1,200 school children have been trained through the Child-to-Child program, covering 30 schools and 67 communities. The children promote their own health and the health of their family and community through: participation in a school health committee; help at home with a sick child and sharing of educational messages with their parents; and helping their local CHW with specific activities.

The communities visited during this final evaluation showed enthusiasm and interest in the CS Project activities, and are very interested in learning more about health and disease treatment and prevention. On several occasions the entire community turned out to meet the evaluators, prepare food, and participate in the interviews. Project activities are helping to bridge the gap between rural communities and public health services through the work of the CHWs and their participation in the SICOS meetings.

4.6 Cost Recovery

The main mechanism for cost recovery in the CS Project has been through the sale of essential medicines and provision of first aid by the CHW at the community health post. Each community receives an initial donation of medicines from PLAN, which are then sold at low prices. The CHW should re-supply the health post with the money earned from sales. This system could be strengthened in the future to better function as an incentive for the CHW. The RSS is interested in promoting community pharmacies, which would include more training for CHWs and allow them to earn more money.

4.7 Capacity Building and Sustainability Plans and Outcomes

GOAL	END-OF-PROJECT OBJECTIVES	STEPS TAKEN	OUTCOMES
Community members will continue to demand services and supplies in CDD/ORT, pneumonia control, nutrition and EPI.	1. 80% of CHWs will provide education, diagnosis and referral for CDD, ARI, nutrition and EPI interventions in accordance with MOH protocols.	1. Bi-monthly community education sessions were held in 130 communities. 2. Regular home visits made by CHWs to mothers. 3. Distribution of IEC materials: flip charts, games, stickers, posters. 4. Radio spots broadcasted.	1. 93.1% of children age 0-23 months with cough and rapid breathing were referred to health personnel or the CHW, up from 55.1% in 1994 (KPC 1997).

GOAL	END-OF-PROJECT OBJECTIVES	STEPS TAKEN	OUTCOMES
2. CHWs and MOH Sub-Centers will continue to provide quality services in pneumonia control, CDD, nutrition, and EPI.	<p>1. 80% of communities will participate in joint diagnosis, planning, implementation, monitoring and evaluation of health activities with the MOH Sub-Center.</p> <p>2. 80% of communities will finance the maintenance of the community health post.</p>	<p>1. 248 CHWs trained in 4 interventions.</p> <p>2. 23 Facilitators and 2 Tutors trained to supervise CHWs.</p> <p>3. Five training events held for community leaders in health issues.</p> <p>4. Child-to-Child program launched with training events for students and teachers.</p> <p>5. Training provided to MOH and RSS staff on 4 interventions and IMCI, and on the functioning of the SICOS.</p> <p>6. Supplies and/or equipment were provided to community health posts and MOH Sub-Centers.</p>	<p>1. 190 CHWs active and in place.</p> <p>2. Supervision system for CHWs in place.</p> <p>3. 130 community leaders trained in health issues.</p> <p>4. Child-to-Child functioning in 30 schools. 1,200 students trained and 100 teachers trained in child survival.</p>

The CS Project plans to undertake the following activities during the coming year to foster sustainability:

1. Hold a transition workshop with MOH and RSS representatives, in order to formulate a sustainability plan.
2. Assure the functioning of the SICOS bimonthly meeting in each Sub-Center on a regular basis, and have a member of the PLAN CS staff present.
3. Have a PLAN CS staff member participate in the Health Area Unit (UCA: Unidad de Conducción de Area) and assist in the transfer of responsibilities for the supervision of CHWs and visits to the communities.
4. Train MOH/RSS staff in how to work with volunteers and accompany them in this work until it becomes part of the MOH/RSS routine.
5. Develop (with the MOH) a strategy to involve the nurse auxiliary of the Sub-Center more fully in project activities.

5 PROJECT INTERVENTIONS

5.1 Nutritional Improvement and Growth Monitoring

Problem Statement

Chronic malnutrition is prevalent throughout various strata of the rural Ecuadorian population. In the 1994 ***Vital Statistics*** report of the Ecuadorian National Census (INEC 1994), malnutrition and anemias appear as a direct cause of mortality among 6.5 % of the total for infants age 0-11 months, and 8.0% for children age 1-4 years. The morbidity figures indicate these nutritional deficiencies as responsible for 5.1% of the total illnesses for infants age 0-11 months, and 3.9% for children age 1-4 years. While these rates are relatively low in themselves, malnutrition is a common denominator in the downward spiral of infection, illness and death brought on by other diseases, and thus remains a significant cause for concern.

Anthropometric data from the MOH Nutritional Surveillance System for Area #1 (first semester 1994), indicates the following rates for children age 0-11 months based on weight for age (N = 5,057; standard deviations based on NCHS standards): 73% weighed between -1 SD and -2 SD; 13% weighed between -2 SD and -3 SD; and 14% were below -3 SD. (The MOH does not provide data on sex differences for malnutrition.)

The PLAN 1994 Baseline KPC Survey did not establish prevalence rates for nutritional deficiencies, but concentrated on knowledge and practices of mothers with children under two years of age, primarily concerning lactation and the introduction and quality of weaning foods. Results indicated that only 24.4% of women continued to breastfeed their children until two years of age, while only 54.3% began to breastfeed within the first eight hours after birth. 61.8 % of mothers with children less than four months of age reported exclusive breastfeeding.

Regarding complementary feeding, the Baseline Survey indicates 75.5 % of 6-9 month olds receive solid or semi-solid foods. The most common weaning food was mashed potatoes and a small portion of a carbohydrate-based soup. The largest portion of food is given to the father plus any meat (if available), while children receive smaller amounts, frequently without meat. Fruit and vegetables are not consumed on a regular basis.

Regarding growth monitoring, the Baseline Survey reports that 69.3 % of children age 0-23 months have child health cards. However, only 21.7% were weighed at least once during the four months prior to the survey.

Proposed Objectives and Strategies

A. Nutritional Improvement

1. 40% of children age 5-9 months will receive complementary feeding.
2. 65 % of children under 2 years of age will have initiated breastfeeding within 8 hours of birth.
3. 22% of children age 0-23 months will weigh less than -2 standard deviations according to NCHS standards, based on weight for age.

B. Growth Monitoring

1. 50% of children age 0-23 months will participate in growth monitoring every two months.
2. 40% of children age 0-23 months who show no weight gain over a two month period will be referred to the MOH Sub-Center for evaluation and treatment.

The project planned to emphasize three strategies in support of the MOH growth monitoring and control program, as follows:

1. Increase the capability of MOH Area Health Center/Hospitals and Sub-Centers to provide appropriate treatment and follow-up to malnourished children.
2. Implement bimonthly growth monitoring sessions in each community, prioritizing children age 0-23 months.
3. Design a nutritional educational program for mothers, including classes on food preparation and the provision of recipes; emphasis on the use of high caloric and high protein traditional foods; management of childhood diseases; and improved feeding and weaning practices. As part of PLAN's agricultural production program component to foster improved nutrition and increase family income, the implementation of family gardens, solar green houses and small livestock production were also considered.

Findings

The following summary shows the comparisons between the original DIP indicator objectives, the 1994 Baseline KPC survey and the 1997 Final Evaluation KPC Survey, for nutritional improvement and growth monitoring. In addition, other indicators also of importance to the project's evaluation are presented. Percentages for each indicator are displayed first, with the respective numerators and denominators in parentheses beneath.

A. KEY INDICATORS

INDICATOR	KPC 1994	KPC 1997
65% of children 0-23 months of age will initiate breastfeeding within 8 hours after birth	54.3% (145/267)	80.0% (240/300)
40% of children 5-9 months of age will receive complementary feeding	75.5% ¹ (37/49)	86.2% (50/58)
50% of children 0-23 months of age will be weighed during growth monitoring every 2 months	21.7% ² (58/267)	52.7% (158/300)
22% of children 0-23 months of age will weigh less than -2 standard deviations, based on weight for age	N/A	N/A

B. OTHER INDICATORS

INDICATOR	KPC 1994	KPC 1997
Total children 0-3 months of age who are exclusively breastfed	61.8% (21/34)	85.7% (42/49)
Total children 20-23 months of age who continue breastfeeding	24.4% (11/45)	9.1% (3/33)
Total children 0-23 months of age who have a growth card	69.3% (185/267)	72.7% (218/300)

Achievements

1. The number of children 0-23 months of age who initiated breastfeeding within the first eight hours after birth, a total of **80%**, has substantially risen from 54.3 % and surpassed the original objective of 65 % .
2. There has been a significant improvement in the percentage of children age 0-3 months who are exclusively breastfed, from 61.8% to 85.7%.

¹ Both the Baseline and the Final Evaluation take into account children 6-9 months of age.

² Both Baseline and Final Evaluation data refer to children weighed during the past 4 months.

3. Growth monitoring efforts have been a success, with a rise from 21.7% to 52.7% of children age 0-23 months weighed at least during the last four months, and the accomplishment of the goal of 50%.
4. The number of children age 6-9 months receiving complementary foods has increased, although it is only a borderline improvement. However, in relationship to the parameter utilized in the DIP, that of children age 5-9 months, the 40% objective has been greatly transcended.
5. A majority of the CHWs interviewed (8/11) knew the correct educational messages for mothers, and mentioned correct follow-up and referral proceedings for children who show inadequate weight gain.

Concerns

1. The 22% objective concerning the number of children who weigh less than -2 standard deviations, based upon weight for age, has effectively been a “non-indicator.” Since its inclusion in the project in 1995, there has been no notable effort towards measuring and incorporating relevant anthropometric data, only a tentative look at the number of children in the red zone of the health cards, in 1996.
2. There has been no discernible change in the amount of children possessing health cards for the registration of growth monitoring, indicating at least contact with the health services; this has remained constant at approximately 70%.
3. There has been a significant decrease in the total number of children who continue breastfeeding in the age range of 20-23 months: from 24.4% to 9.1% .
4. There is no data for the number of children age 0-23 months referred to the MOH Sub-Center who show no weight gain over a two month period. However, this indicator (originally part of the DIP) was never effectively incorporated into the project, either in terms of data (from the Baseline to the Final Evaluation), or in terms of interventions; effectively, it became the “forgotten indicator. ”

Discussion and Conclusions

A. Effectiveness

Overall, the data for the nutritional improvement indicators show significant progress since 1994 (although it should be noted that some of the indicators are representative of small sub-samples, and consequently the confidence intervals are wider than average). The results of the 1997 KPC Survey indicate that project activities have been effective in increasing nutritional practices--primarily those pertaining to breastfeeding--and in raising coverage rates for growth monitoring

sessions (if not for health card possession). In great part, this may be attributed to the excellent level of knowledge pertaining to nutritional control among the CHWs, their skill at managing the respective interventions, and the recognition granted them by the local mothers.

MOH personnel remain involved in the promotion of these activities, together with PLAN, and a commitment stands to send a physician or a nurse to supervise the growth monitoring session, provide education, and vaccinate children; however, it is unclear to what extent the MOH has genuinely assumed an increasing responsibility for the bimonthly community meetings. As it would appear, this relationship still needs to be further strengthened. But the overall enthusiastic community response to the sessions provides an excellent opportunity for both PLAN and the MOH to reinforce educational messages (pertaining to many differing interventions) for families and leaders, as well as mothers. In another area, the collaboration between PLAN and the MOH also shows marked progress in regards to the increasing amount of references and cross-references between the two.

One area which was noted as requiring further effort, concerns the degree to which weighing sessions may not be noted in the child's health card held by the mother, but rather only in the CHW or other health service's records (this may also have a negative effect upon the KPC data).

B. Relevance

Growth monitoring and nutrition education are appropriate interventions, especially when combined with specific actions to improve nutritional status and timely referral of malnourished children. The results of the project have shown that ongoing supervision, education and training of all health services personnel, both PLAN and MOH, guarantees greater levels of responsibility and commitment to the stated objectives, thus leading to more significant success. However, factors such as cultural issues, educational levels, income, food availability, and community sanitation also have an impact on the degree to which project interventions can impact nutritional status.

Recommendations

- The objective to reduce malnutrition was added in October 1995, in response to USAID's recommendations in the DIP review; the objectives formulated were based on secondary data from the MOH. The project *still* needs to do an appropriate anthropometric study to obtain accurate nutritional status baseline information: files have already been created in Epi Info, and should be utilized. Data should be collected for different levels of malnourishment (e.g., -2 and -3 standard deviations), based on weight for age, weight for height and height for age measurements. With these, it will be possible to provide project managers with sufficient data for decision making, and to formulate more appropriate objectives for the future.

- Reinforce the relationship between PLAN and the MOH, in order to strengthen the system of references and cross-references.
- Increase educational efforts of MOH personnel focused on nutritional improvement; for example, breastfeeding, complementary feeding, proper use of the health cards, and alternative recipes.
- As a manner of “cross fertilization” between programs, all breastfeeding objectives should also be included as objectives in PLAN’s recently initiated reproductive health project.
- Emphasize the necessity that all mothers possess in their homes, and be educated in the use of, the child health card: this either in addition to the card’s presence in the health services, or instead of.
- Human resource training within PLAN and the MOH should be strengthened and ongoing, with a focus on community issues and the application of specific strategies.
- Local human resources--traditional healers, midwives, volunteers--should be incorporated at more significant levels as part of the implementation of nutrition objectives, for example as CHWs; this as part of an overall strategy of greater community participation with the project aims.
- Undertake more detailed ethnographic studies of the target populations, in order to better comprehend the cultural factors which affect the success of project objectives and interventions; for example, the cultural barriers to more frequent weighing sessions.
- Strengthen the efficiency of the HIS in Epi Info, already designed and implemented, to better document changes over time (in addition to the anthropometric issues outlined above). To date, while the HIS is taken advantage of, there does not exist an overall commitment to it, nor have all the “bugs” been successfully worked out of the system itself. As expressed by Dr. Santiago Davila during the course of the Final Evaluation, it is highly recommended that PLAN contract with an outside intern for a period of 4-6 months at the CS Project site, whose responsibility would be to: assure that the HIS functions smoothly; streamline data input for the process indicators; initiate the anthropometric investigations; and assure that data processing in Epi Info is well understood by key PLAN personnel.

5.2 Immunizations (EPI)

Problem Statement

According to the ***Vital Statistics*** report of the Ecuadorian National Census (INEC 1994), the proportion of childhood deaths due to vaccine-preventable diseases is relatively low, especially when compared with deaths associated with maternal health, acute respiratory infections and diarrheal disease. Vaccine-preventable diseases as a cause of mortality was only 1.1% of the total for infants age 0-11 months, and 1.5 % for children age 1-4 years. The morbidity figures indicate these same conditions as 1.3% of the total causes for infants age 0-11 months, and 0.8% for children age 1-4 years. Consequently, EPI interventions have been given a relatively moderate priority by PLAN, in comparison with other project objectives, and the greater role played by the MOH.

PLAN's Baseline KPC Survey (1994) reported 53.3% of children age 12-23 months vaccinated with the DPT3 antigen. The drop-out rate for DPT1/DPT3 was 11.0% . Vaccination cards were presented for 62.8 % of children surveyed. PLAN staff stated the following reasons for low coverage rates among children: lack of knowledge regarding childhood illnesses and vaccinations; and lack of interest regarding the completion of the schedule (DIP 1995).

Baseline data was not collected regarding tetanus toxoid immunizations in 1994; however, during the 1996 Mid-Term Evaluation, data was collected indicating a very low coverage of 2.4% of mothers with at least two immunizations.

Proposed Objectives and Strategies

The DIP established objectives in terms of coverage targets for children 12-23 months of age with the completed series of vaccinations (i.e., BCG, DPT3, OPV3 and measles). In addition, projected coverage of women age 15-49 years was based on at least two doses of tetanus toxoid. The project's stated vaccination objectives are as follows:

1. 60% of children 12-23 months of age will receive the complete vaccination schedule (BCG, DPT3, OPV3, measles).
2. 40% of mothers 15-49 years of age will receive at least two doses of tetanus toxoid.

This intervention was sponsored by PLAN Match funds; the emphasis has been to support the MOH's expanded immunization program. PLAN also assisted the MOH in the development of improved management systems (e.g. information, training, logistics). Immunizations are given at fixed locations and during four annual campaigns, during which PLAN assists the MOH with such logistical considerations as cold chain equipment, transportation to vaccination sites, and supplies (mainly syringes). PLAN supports the EPI training program offered by the MOH for their personnel, and in addition the orientation of CHWs in order to educate mothers regarding the importance of timely vaccinations.

Findings

The following chart shows comparison data between the original DIP indicator objectives, the 1994 Baseline KPC survey and the 1997 Final Evaluation KPC Survey, for immunization related interventions. Other indicators of importance to the project's evaluation are also presented.

A. KEY INDICATORS

INDICATOR OBJECTIVE (DIP)	KPC 1994	KPC 1997
60% of children 12-23 months of age will receive the complete vaccination schedule (BCG, DPT3, OPV3, measles)	45.3% (62/137)	57.7% (79/137)
40% of women 15-49 years of age will receive at least 2 doses of tetanus toxoid vaccine (TT)	2.4% (71292) ³	9.0% (27/300)

B. OTHER INDICATORS

INDICATOR	KPC 1994	KPC 1997
Total coverage of children 12-23 months of age who have received DPT1 vaccine	59.9% (82/137)	71.5% (98/137)
Total coverage of children 12-23 months of age who have received DPT3 vaccine	53.3% (73037)	59.9% (82/137)
Total coverage of children 12-23 months of age who have received measles vaccine	56.2% (77/137)	61.3% (84/137)
Dropout rate of DPT1/DPT3, for children 12-23 months of age	11.0%	16.3%
Possession of vaccination cards among children 12-23 months of age	62.8% (86/137)	72.3% (99/137)
Possession of maternal vaccination cards (TT vaccine) among mothers of children 0-23 months of age	4.5% (13/292) ⁴	14.3% (43/300)

³ TT coverage was not measured in the 1994 KPC; these figures were determined during the 1996 Mid-Term Evaluation, and consequently serve as baseline data. All mothers surveyed are included, regardless of age.

⁴ Ibid.

Achievements

1. Data collected for the Final Evaluation KPC in 1997 shows modest improvements in virtually all of the indicators concerned, since the 1994 Baseline KPC; however, it must be recognized that most are not statistically significant, or are at best borderline.
2. One of the strongest contrasts is precisely that of the key indicator regarding the complete vaccination schedule: a rise from 45.3% to 57.7%.
3. All CHWs interviewed could state the correct messages for EPI, and knew at what age each antigen should be administered.

Concerns

1. Neither of the original two DIP objectives were technically met during the life of the project, and the 40% TT goal is especially distant.
2. The percentage of mothers immunized with at least two doses of TT is low (9.0%), and is equally so in regards to maternal vaccination card possession (14.3%). There was no perceived difference in these low rates among the group of targeted "tetanus high risk" communities in the project area.
3. Coverages themselves of all vaccines remain only fair in an absolute sense with, as previously stated, little change over time. The 57.7 % complete schedule coverage found for children 12-23 months of age is lower than that reported by the Ecuadorian Demographic and Health survey for the same age range at the national level, 68.1% (ENDEMAIN 1994).
4. The drop-out rate of DPT1/DPT3 has remained relatively constant, and without decline.
5. Information gleaned from the interviews of CHWs also indicates that missed opportunities for vaccinations remain frequent; in particular, the tracking of drop-outs and no-shows is not practiced on a regular basis. Many CHWs were not clear regarding their responsibilities regarding follow-ups through home visits.

Discussion and Conclusions

A. Effectiveness

Overall EPI progress may be seen as an intervention of lesser concern to the project's final evaluation, considering that PLAN's role has been to promote vaccination coverage, while the MOH is responsible for actual service delivery. However, the expected results of the collaboration between PLAN's provision of supplies and logistical support, and the MOH's organization and manpower, have not been optimal. Childhood vaccination rates have not

improved significantly during the life of the project, as regards the percentage of children who have received any of the four individual antigens or the complete schedule. However, considering the quantitative element that complete vaccination schedule coverage has increased by 12.4%) together with the minor differences in both the DPT3 and measles vaccine totals, and also recognizing the qualitative factors summarized below, it may be stated that the evidence supports the assessment of EPI coverage as slowly evolving in a positive sense.

Interviews with MOH staff indicate that there have been shortages of vaccines and periodic shortages of gasoline for transport to the communities; consequently, the MOH fixed immunization sites offer vaccines only one day a week, and in some communities even more infrequently: if a mother does not visit the Health Sub-Center on that particular day, her child may not be vaccinated.

An additional factor which has had a negative effect on EPI coverage and should be taken into consideration, is the prolonged political crisis that Ecuador has suffered during the preceding year. Consequences of this have included frequent changes in personnel at the MOH level, and a three month strike of MOH health workers which resulted in a cut-off of the vaccine supply.

Another possible explanation for the low coverage rates is that only 72.3 % of children age 12-23 months presented vaccination cards during the KPC survey. However, in regards to the 27.7 % of vaccination cards not observed, it is not possible to assume that these "lost" cards would have resulted in higher rates of coverage; according to WHO norms, only data from vaccination cards is used to assess coverage, as opposed to verbal reports, and thus it is necessary to consider those individuals without these documents as not immunized.

This consideration also holds true concerning TT vaccination coverage. During the 1997 KPC Survey, many women claimed to have received the tetanus toxoid vaccine (53 .0%), despite the fact that only 14.3 % could present a maternal health card, and a minimum two dose coverage was calculated at a low 9 .0 % . Thus, based on the data provided by the observed cards, the project has not been effective in the promotion of TT coverage.

Reasons for the low TT coverage, according to both PLAN and the MOH, include poor registration and reporting procedures; a shortage of vaccines and other vital supplies at MOH Sub-Centers (as indicated above); a lack of maternal health cards combined with an improper utilization of the same; and the failure to adequately comprehend and adapt to cultural issues concerning neonatal tetanus. In addition, there exists an ongoing difference of criteria between PLAN and the MOH concerning TT vaccinations; the latter's policy targets only those women who are actually pregnant, rather than all women of reproductive age. (However, when taking into consideration the low coverages of recently pregnant women indicated by the data, it would seem that neither criteria is currently successful.)

PLAN also acknowledges that the project has not placed full emphasis on tetanus interventions in the past year as part of its EPI objectives, since the first data concerning coverage was

analyzed only during the 1996 Mid-Term: this component has been perceived as belonging more to the maternal and reproductive health program, whereas the CS Project strategy has been to support the MOH, and not implement this intervention. As this focus on maternal health is planned to significantly increase beginning in late 1997, it may be expected that both maternal health cards and actual TT vaccination coverage will improve in the immediate future.

B. Relevance

As a result of the 1996 Mid-Term Evaluation, it was recommended that the objective for the complete vaccination schedule for children 12-23 months of age be raised to 70%, considering that the original DIP goal of 60% had nearly been reached (at 53.5 %). However, this revised objective proved to be unrealistic, as the initial mark was barely attainable. The projected goal for TT coverage was even more beyond reach, taking into consideration the reality of the PLAN CS project and the actual focus of the proposed interventions.

Nevertheless, as previously stated, upon taking into account the reduced emphasis placed upon EPI strategies in the original project outline, immunization coverage may be considered to have shown moderate progress in the making. Further achievements are likely in the future if current efforts continue: if the educational and tracking activities of CHWs are maintained and strengthened, disease rates will likely remain under control, with continued support from PLAN and the MOH. Interviews with mothers and community leaders indicate that childhood vaccinations are valued by families; however, the exception remains the perceived importance of TT vaccinations for women, which was not frequently stressed. Educational efforts can increase the demand for immunization services, which will assure the continued prevention of vaccine preventable illnesses.

Recommendations

- Take into account all possible external threats to the project before formulating precise objectives; for example, instability in the MOH; political and economic fluctuations; and professional differences with counterpart agencies. Goals and objectives should be strictly analyzed as to their ultimate feasibility and attainability.
- Coordination with MOH personnel must be greater, in order to improve both the formulation of objectives, goals and strategies; unify criteria inherent in these (particularly related to TT vaccinations); and strengthen the implementation of the project itself.
- The project's strategy to support the MOH through education, promotion, tracking activities, transport and vaccination supplies, still needs to be strengthened. CHWs, while clear concerning their overall responsibilities, must clarify their role as regards follow-up of no-shows and drop-outs.

- PLAN should continue to work closely with the MOH to provide the needed assistance to ensure greater vaccination coverage. Vaccination cards should be held in duplicate: one in the health facility, and the other in the possession of the mother. PLAN can also facilitate communication between the Provincial Health Departments and international organizations, which may be in a position to donate vaccines during times of shortages.
- Recommendations of the Mid-Term Evaluation concerning TT vaccination coverage should be maintained. These include:
 1. Increase the designated “tetanus high risk” areas to include the majority of PLAN communities, and thus increase TT prioritization.
 2. Work more closely with the MOH on the unification of criteria for TT vaccinations--namely, the target population as consisting of all women of reproductive age, or just those currently pregnant.
 3. Assist the MOH with printing and provision of maternal health cards to all Sub-Centers in the project area, and promote their possession by mothers.
 4. CHWs should keep a register of all women in the community of reproductive age, and target them for educational activities and follow-up. The Community Register developed by PLAN should be strengthened for this purpose.
 5. PLAN and MOH staff should utilize the bimonthly weighing session to vaccinate women as well as children.
 6. Provide education and training regarding the importance of TT coverage, and use of the maternal health card, to MOH personnel, CHWs, and mothers. The Child-to-Child program should be used to promote vaccinations, and IEC messages need to be developed and broadcasted.
 7. Educate mothers regarding the importance of TT for protection from cuts and wounds and the fact that the antigen protects children as well as women.
- Focus here too on human resource training within PLAN and the MOH, especially in community issues pertaining to adequate immunization coverage.
- Include EPI issues and problems in the proposed ethnographic studies of the target populations, in order to better comprehend the cultural factors which affect the success of project objectives and interventions.
- Also apply the Health Information System (HIS) to better track trends in EPI progress.

5.3 Control of Diarrhea1 Diseases (CDD)

Problem Statement

Diarrhea1 diseases continue to be one of the leading causes of sickness and death in rural Ecuador. As stated in the 1994 ***Vital Statistics*** report of the Ecuadorian National Census (INEC 1994), acute diarrhea1 diseases are the direct cause of mortality among 14.4% of the total for infants age 0-11 months, and 18.6% for children age 1-4 years. The morbidity figures indicate that diarrheal diseases are responsible for 31.1% of the total illness in infants age 0-11 months, and 27.2 % in children age 1-4 years.

The PLAN 1994 Baseline KPC Survey reported diarrhea prevalence in children age 0-23 months at 41.9 % ; in the 1997 KPC, this figure remained statistically unchanged at 39.0%. It is estimated that each child of this age group will have on the average a total of 8-10 episodes of diarrhea per year, and that each episode will last between two and four days.

Regarding mothers' knowledge and practices, the DIP indicates that during diarrhea episodes, mothers frequently give the child herbal teas, but often reduce the quantity of solid and semi-solid foods. Local cultural beliefs concerning diarrhea are strong, and it is often seen as a condition brought on by supernatural causes; for example, by the evil eye (*mal ojo*); if a child passes by a cemetery (*mal viento*); or by varying degrees of fright (*susto*). Mothers will consult traditional healers if the cause is thought to be one of the above. The relationship between sanitation and hygiene and illness has not been well established among the general population.

Proposed Objectives and Strategies

The project's objectives for diarrheal disease control are as follows:

1. 85 % of children age 0-23 months who had an episode of diarrhea without dehydration during the previous two weeks, will receive the following treatments:
 - a) Administration of a sufficient quantity of liquids in order to replace lost bodily fluids, utilizing oral rehydration solution (ORS packets) or home mix (salt and sugar water, rice water).
 - b) Continuation of the normal diet and "catch-up" foods, in the same or increased amounts of breast milk, other liquids, and solid or semi-solid foods.
2. 50% of mothers with children 0-23 months of age will recognize the following danger signs for referral of diarrhea episodes: signs of dehydration (sunken eyes, dry mouth, tenting, sunken fontanelle, intense thirst); frequent vomiting; fever; more than six liquid depositions per day; blood in stools; and loss of appetite.

The MOH has administered the diarrheal diseases component with technical and logistical support from PLAN for strengthening referrals, training, supervision, logistics and information systems. The project focus has been on emphasizing the importance of dietary management of diarrhea, including: the early initiation of fluids; preparation and administration of ORS; and increased amounts of solid and semi-solid foods, liquids and breastfeeding during and after the episode. Appropriate management of diarrheal disease is fostered at three levels: household, community (ORT Unit) and MOH services. Cases of prolonged diarrhea and suspected cholera or dysentery should be referred to the MOH Sub-Center, where the case is evaluated and treated, including referral to the Area Hospital if warranted.

Findings

The following summary shows comparison data between the original DIP indicator objectives, the 1994 Baseline KPC survey and the 1997 Final Evaluation KPC Survey, for diarrheal diseases; other important indicators are also included.

A. KEY INDICATORS

INDICATOR OBJECTIVE (DIP)	KPC 1994	KPC 1997
85% of children 0-23 months of age who had an episode of diarrhea without dehydration during the previous two weeks, will receive the following treatments:		
1) Administration of a sufficient quantity of liquids in order to replace lost bodily fluids:		
• Oral rehydration solution (ORS packets)	17.9% (20/112)	47.9% (56/117)
• Home mix (salt and sugar water, rice water)	2.7% (3/112)	8.5% (10/117)
2) Continuation of the normal diet and "catch-up" foods, in the same or increased amounts of:		
• Breast milk	81.5% (53/65)	86.0% (74/86)
• Other liquids	67.5% (52/77)	88.5% (92/104)
• Solid or semi-solid foods	44.2% (34/77)	63.5% (66/104)

A. KEY INDICATORS (can't)

INDICATOR OBJECTIVE (DIP)	KPC 1994	KPC 1997
50% of mothers with children 0-23 months of age will recognize the following danger signs for referral of diarrhea episodes:		
• Dehydration	10.1% (27/267)	53.3% (160/300)
• Vomiting	15.0% (40/267)	20.7% (62/300)
• Fever	10.1% (27/267)	19.0% (57/300)
• More than 6 liquid depositions per day	0.7% (2/267)	67.7% (203/300)
• Blood in stools	0.7% (2/267)	17.3% (52/300)
• Loss of appetite	18.4% (49/267)	45.3% (136/300)

B. OTHER INDICATORS

INDICATOR	KPC 1994	KPC 1997
Total children 0-23 months of age with an episode of diarrhea during the previous two weeks, who received antibiotics or other pharmaceuticals	23.2% (26/112)	27.4% (32/117)
Total children 0-23 months of age with an episode of diarrhea during the previous two weeks, who were referred to:		
• Health personnel (physician, nurse, auxiliary nurse)	69.6% (78/112)	53.0% (62/117)
• CHW	14.3% (16/112)	17.1% (20/117)
• Ethnomedical personnel (traditional healer, midwife)	6.3% (7/112)	5.1% (6/117)
• Pharmacy or store	3.6% (4/112)	6.0% (7/117)
• Friends or relatives	20.5% (23/112)	5.1% (6/117)

Achievements

1. There has been a significant increase for children age 0-23 months who receive ORT during episodes of diarrhea, from 17.9% in 1994 to **47.9%** in 1997.

2. A continuation or increase in the amounts of liquids (other than breastmilk) and solid and semi-solid foods during an episode has significantly risen since the Baseline KPC: from 67.5 % to 88.5 % in the case of liquids (thereby accomplishing the objective), and from 44.2 % to 63.5% in the case of foods.
3. The percentage of mothers who recognize the signs of dehydration in a child with diarrhea has greatly increased, from 10.1% to 53.3%, and has achieved the objective.
4. Three other danger signs of diarrhea have also significantly increased in recognition among the mothers: frequent liquid depositions, blood in stools and loss of appetite. In regards to the first two, however, there exists some reason to suspect an error in the Baseline data, as being too low (0.7%, in both cases).
5. All CHWs interviewed could state the correct preparations for ORS, and could correctly mention the danger signs of dehydration. A majority (10/11) knew the correct referral procedures.

Concerns

1. There has been no significant change since 1994 concerning an increase in the use of home mixes, or the amount of breastmilk given to the child with diarrhea. However, in the case of breastfeeding, the Baseline data (81.5 %) indicates that the DIP objective had effectively been reached at the outset.
2. There is little change in the recognition of vomiting and fever as danger signs during a diarrhea episode.
3. The DIP goals concerning the proper treatments to be given during diarrhea, specifically ORT and/or home mixes, were not met.
4. The use of antibiotics, and other possibly inappropriate home treatments for diarrhea, has remained constant, albeit relatively low at approximately a quarter of those surveyed.
5. There is little change in the trends for children with worrisome diarrhea referred to an external source of assistance; all have remained constant, or declined (in the case of health personnel and friends or relatives).

Discussion and Conclusions

A. Effectiveness

In general, data from the 1997 KPC Survey may be interpreted as indicating that targeted high risk groups are being reached effectively. The increases in practices relating to the child's food and liquid intake during diarrhea are positive, and the DIP goals on the whole were achieved. Concerning the use of ORT, this has increased significantly since baseline data was gathered in 1994, although the 85 % objective has not yet been met. All of the recommendations of the Mid-Term Evaluation designed to increase ORT use were undertaken: an improved distribution system of ORS packets at the community level, and expanded education for mothers as to its importance. However, the apparent usage rate stalled, as ORS packet use was measured at 41.2 % during the Mid-Term. One possible explanation is the lack of clarity in the data concerning exactly how home treatments are classified by the mothers: for example, the use of herbal teas for diarrhea remains high (63.2%), and there are indications that many mothers will also prepare some form of ORS using the same tea water, yet neglect to mention it as ORT.

Despite the lack of attaining the actual DIP objective, it may be concluded that overall the project is succeeding in gradually improving the knowledge and practices of mothers regarding the proper treatment of diarrhea episodes. An interesting result from the data demonstrates that of all the mothers who used ORS packets as a treatment for their child's diarrhea, 63.0% of them had also participated in a growth monitoring session within the previous four months: this may be seen as representative of a close contact with the CHW or the health services, and indicative of the benefits inherent in this to crossover into other interventions--i.e., the distribution system of ORS. Thus, the direct strategies implemented by the project are showing results, although more time and effort are still required.

A key factor related to any diarrhea episode is the mother's ability to recognize the danger signs of a more serious case, one requiring prompt attention by outside health personnel. The most important danger sign--dehydration--has increased in recognition among the mothers by a remarkable 43.2%, well attaining the DIP objective. Recognition of other danger signs measured also increased, and goals were realized. Although recognition of vomiting, fever and blood in stools did not exhibit notable progress or reach the 50% mark, as a whole this indicator may be classified positively as having met its objective. In this respect, the educational strategies utilized have thus shown considerable success, primarily due to the excellent knowledge of the CHWs in this respect. It is also necessary to acknowledge the important role played by PLAN's adoption of the IMCI guidelines; this has already had a visible effect on local human resource performance.

Work still needs to be done in regards to the percentage of mothers who administer antibiotics and other pharmaceuticals for diarrhea episodes, a practice which remains stable around 20%-30% (although it is worth pointing out that there has been a **decrease** since the 1996 Mid-Term KPC

on this indicator, when antibiotic use was measured at 46.5 %). The project still needs to adequately address this issue of self-medication, as it should also the possible lack of actual referrals of diarrhea cases.

B. Relevance

The major causes of illness and death due to dehydration in the project service area include: lack of potable water, poor or nonexistent sewage systems, lack of hygiene in and around the home, and inadequate management of diarrhea cases by mothers. Activities related to diarrhea control emphasize education of mothers regarding proper home management of diarrhea, and the training of CHWs to provide adequate diagnosis, treatment and referral procedures; both of these approaches have proven generally effective in diarrheal disease control at the community level, during the life of the project.

Recommendations

- Intensify the training and education of both CHWs and mothers, in relation to the importance of ORT during episodes of diarrhea. Discourage the use of antibiotics and other pharmaceutical remedies, unless directly called for by established norms (i.e., for cholera or dysentery).
- Identify other potential conduits for the diffusion of educational messages concerning diarrheal diseases; for example, with school children (the Child-to-Child program), and with community human resources (traditional healers, midwives).
- Continue the assimilation of the IMCI guidelines into the project, as specified in the training materials authored by WHO/PAHO, UNICEF and Basics/USAID.
- Further strengthen the extent of the distribution system for ORS packets at the community level, expanding it throughout all communities of the project area.
- Further promote the use of the community health post by increasing contact between mothers and CHWs. CHWs should continue to provide mothers with ORS packets whenever possible, then follow-up on their use during home visits. Emphasize the use of services at the community health posts, rather than higher level health centers.
- Incorporate cultural beliefs about diarrheal diseases in the proposed ethnographic investigation; for example, local concepts concerning varying causes and respective treatments of diarrhea, and a taxonomy of the differing classifications of the disease itself.

5.4 Pneumonia Control

Problem Statement

The prevalence of pneumonias is persistently one of concern throughout Ecuador, being a leading causes of illness and death among young children. The 1994 ***Vital Statistics*** report of the Ecuadorian National Census (INEC 1994), shows that pneumonias are the leading single cause of mortality among 36.7 % of the total for infants age 0-11 months, and 31.6 % of those children age 1-4 years. The morbidity figures demonstrate that respiratory infections are responsible for 27.6% of the total sickness in infants age 0-11 months, and 24.5 % in children age 1-4 years.

Data from the PLAN 1994 Baseline KPC Survey indicated that 32.6% of children age 0-23 months suffered from a case of cough and rapid breathing during the two weeks prior to the survey, suggesting the presence of a potential respiratory infection; in the 1997 KPC, it was a lesser 24.3 % . It is estimated that each child of this age group will have on the average a total of six episodes of pneumonia per year.

In regards to health services used by mothers for a child with a suspected pneumonia, the 1994 data demonstrated that 44.8% visited a health professional, and only 10.6% consulted with the CHW. The level of recognition of the symptoms of pneumonia in their children by mothers, as evidenced in the 1994 KPC Survey, was low. A total of only 35.2% could mention rapid breathing; 1.5% reported chest in-drawing; 18.7% said drowsiness; and 18.0% mentioned lack of appetite as a symptom.

Proposed Objectives and Strategies

1. 80% of children age 0-23 months who suffered an episode of cough and/or nasal secretion, without rapid breathing during the past 2 weeks, will receive administration of liquids, continuation of feeding (including breast-feeding), and catch-up feeding. Acetaminophen can be administered for fever.
2. 70% of children age 0-23 months who suffered an episode of cough with rapid breathing during the previous two weeks, will be referred to a health services center or to a CHW.

The MOH has administered the diarrheal diseases component with technical and logistical support from PLAN for strengthening referrals, training, supervision, logistics and information systems. CHWs provide education to mothers and community members regarding home management, with emphasis on danger signs which warrant referral of pneumonia cases. MOH staff are trained regarding clinical procedures for pneumonia case management, and Sub-Centers are equipped to provide referral treatment. Consultations and antibiotic treatment are offered to all children under five years of age free of charge by MOH services; CHWs receive extensive training and practice in both case diagnosis and the administration of antibiotics.

The USAID Technical Review of the DIP recommended not using limited project resources and effort to focus on continued liquid and feeding for upper respiratory infections (see Objective #1, above). The reviewers suggested that prompt parental recognition of danger signs of pneumonia, and prompt care sought from health professionals who offer quality standard case management, is much more important to Child Survival. Consequently, this objective was ultimately eliminated from the project.

Findings

The tables that follow show comparison data between the original DIP indicator objectives, the 1994 Baseline KPC survey and the 1997 Final Evaluation KPC Survey, for pneumonia control. Other indicators of importance to the project's evaluation are also presented.

A. KEY INDICATORS

INDICATOR	KPC 1994	KPC 1997
70% of children 0-23 months of age with an episode of cough with rapid breathing during the previous two weeks, will be referred to:		
• Health personnel (physician, nurse, auxiliary nurse)	44.8% (39/87)	80.8% (59/73)
• CHW	10.3% (9/87)	12.3% (9/73)

B. OTHER INDICATORS

INDICATOR	KPC 1994	KPC 1997
Total mothers with children 0-23 months of age who recognize the following danger signs and symptoms for children with cough, as cause for referral:		
• Rapid breathing	35.2% (94/267)	58.0% (174/300)
• Chest in-drawing	1.5% (4/267)	22.7% (68/300)
• Drowsiness	18.7% (50/267)	7.3% (22/300)
• Loss of appetite	18.0% (48/267)	29.3% (88/300)

Achievements

1. There has been a significant increase in the number of mothers who seek assistance and treatment from qualified health personnel: up from 44.8 % in 1994, to 80.8 % in 1997. The original DIP goal was thus surpassed by 10.8%.
2. The 1997 KPC data show that 58.0% of mothers recognize rapid breathing as a danger sign for pneumonia, an increase of 22.8% since 1994.
3. Although still low in absolute terms, the symptom of chest in-drawing is now recognized by 22.7% of mothers, up from a mere 1.5% in 1994.
4. A majority of the CHWs interviewed (9/11) knew the danger signs of pneumonia, and could correctly state referral procedures.

Concerns

1. The number of mothers who take advantage of CHWs--the closest available resource--for a suspected pneumonia has remained unchanged over the life of the project; approximately 10% of the population.
2. The other danger signs of pneumonia, excessive drowsiness and loss of appetite, have not increased their recognition factor in the past three years; apparently, drowsiness has actually decreased.

Discussion and Conclusions

A. Effectiveness

The project activities undertaken have been effective in significantly increasing the number of children with cough and rapid breathing--suspected cases of pneumonia--who are referred to qualified upper level health personnel; a notable improvement over the original objective (while taking into account smaller than average sub-samples). Thus, PLAN has achieved marked success in this important indicator, related to the care of a potentially fatal illness. Although local interviews identify the CHW as holding a position of respect and appreciation within the community, this resource has been underutilized for pneumonia referrals.

It may perhaps be necessary for PLAN to re-think the role of the CHW in pneumonia control, in light of their presumably minor role played in treating potential cases within the community. Here too, it is advisable to further investigate the issue from an ethnographic point of view: Is the potential case of pneumonia identified by the community as an exclusively biomedical condition, to be seen only by high level health professionals? If so, then perhaps education and training should be concentrated primarily on the mother herself, thereby further strengthening

her knowledge of the danger signs for immediate referral, which has already proved effective. However, the opposing viewpoint would refute obviating the CHW, and maintain key elements which have proven successful, such as the provision of cotrimoxazole. It should also be remembered that the enhanced role of the CHW--precisely that related to the increased use of antibiotics--is relatively recent in the life of the project (the last 14 months) and only applied to a reduced group (a total of 10). This could also explain the notably low acceptance of the CHW for immediate pneumonia control, as evidenced in the recent KPC: either way, the issue remains one that requires further analysis.

With further reference to this point, the data would seem to confirm that the mother's recognition of the danger signs of pneumonia is directly associated with the absolute quantity of referrals. Although not originally a key indicator specified in the DIP, the emphasis placed upon education in this area may be seen as a fundamental factor in the success of health services utilization. More mothers are now aware of the two principal danger signs--rapid breathing and chest in-drawing--indicating that, as a whole, the project's educational interventions have proved effective. As evidence of this, those mothers with the closest direct contact with the health services were more likely to be aware of the danger signs: 65.2% of the mothers participating in growth monitoring could recognize rapid breathing, but only 50.0% of those who **don't** participate could. The trend to increased awareness of the danger signs is also very marked in the case of chest in-drawing. During the 1996 Mid-Term Evaluation, this indicator was measured at a mere 2.1%) essentially static at its minimal point of origin of 1.5 %; in 1997 it was measured at 22.7%. It is also possible here to appreciate the role that the IMCI modules have played, since their introduction in the past year as an integral aspect of the program.

B. Relevance

Although educational activities have been effective in raising levels of knowledge regarding the danger signs for pneumonia, knowledge alone is not sufficient to change mothers' behavior. Even though the data shows that mothers increasingly seek treatment for episodes of probable pneumonia, there are still cases which arrive at health facilities too late to save the child's life. MOH personnel indicate that pneumonia continues to be a serious health problem in the project impact area, mainly due to less than timely referrals.

Even though more mothers recognize rapid breathing and chest in-drawing as danger signs and subsequently take their children to a health professional, if a child becomes sick at night or on weekends the only options are the Area Health Center or Provincial Hospital. Transport is difficult at night, limiting access to treatment centers, and the community based programs suffer the weaknesses discussed above. PLAN needs to consider and explore alternative viable options, including manners in which to further integrate upper-level health services and local community services, including traditional healers, in ways which are acceptable to the target population.

Recommendations

- Increase the education and training coverage with an intensive focus on pneumonia control from the current 47 high risk target communities, to all of the project communities. This should include:
 1. CHWs should continue to work under the supervision of the Sub-Center, and report back regarding cases seen and referred, and educational activities undertaken.
 2. CHWs should be supervised monthly during the health committee meeting at the MOH Sub-Center. Community visits will be scheduled for those with specific needs or difficulties.
 3. Continue the training of CHWs in the use of appropriate antibiotics (e.g., cotrimoxazole), and maintain an adequate supply of the same.
 4. Further intensify and expand the educational component for mothers involving early pneumonia detection and referral, in order to reinforce the advances already achieved.
- Promote greater inter-institutional cooperation between PLAN, MOH personnel and the community, including training activities and the formulation of a detailed and long term Action Plan. While this is valid for ***all*** of the project's interventions, it is especially critical for pneumonia control, considering the higher probability of serious consequences unless quick action is taken.
- Include pneumonia control components in the proposed ethnographic study, to better understand local concepts of pneumonia, its treatments, and the nature of its referrals and health seeking behaviors.

ISSUES IDENTIFIED BY THE EVALUATION TEAM

6.1 Project Design

The original project design was based on the implementation of four separate interventions, each with their own protocols. During the last 14 months, PLAN Austro, in consultation with PAHO/WHO and BASICS, decided to unite these interventions into a single Integrated Management of Childhood Illness (IMCI) strategy. The focus of the original ALRI intervention was changed to pneumonia control, in accordance with new guidelines from PAHO/WHO, USAID, and the MOH.

Although the project design called for the administration of antibiotics by CHWs for pneumonia control, the MOH was not in agreement with this practice, due to the possibility of inadequate management which might result in the proliferation of resistant bacteria due to overuse. In consultation with the MOH, several communities were chosen based on distance from health centers and high mortality rates for pneumonia. The most capable CHWs in these communities were chosen to be trained in diagnosis and treatment of pneumonia with antibiotics. Physicians and professors from the University of Cuenca School of Medicine and pediatricians from local hospitals provided the training.

Problems also arose with the immunization of women age 15-19 years of age with tetanus toxoid, as previously mentioned; the MOH is in favor of vaccinations only for those women currently pregnant. The resulting accord designated 11 communities in subtropical climates as target populations for TT coverage, due to epidemiologic data indicating higher risk factors for neonatal tetanus. In the remaining communities, the MOH policy of vaccination only for pregnant women with two doses of TT was upheld, and this was supported by the project.

Another change in the project design included the elimination of work with home gardens and small livestock production, a strategy which supported the nutrition component but took away valuable time from the implementation of the CDD and pneumonia control interventions.

6.2 Budget Management

There have been some budget modifications from the original budget presented in the DIP. more funds were needed for personnel and consultants, and less was spent on training of MOH staff and production of educational materials. More staff were needed to cover the work in 130 communities and to reach the project's goals. An outside consultant was hired to assist with the KPC surveys for the Mid-Term and Final Evaluations, and this cost had not been contemplated in the DIP. Co-financing from other institutions for MOH training and

material production reduced the costs in these areas.

The financial assistance obtained from collaborating institutions is a result of the excellent coordination efforts made by the CS Project. Specific areas where support was obtained include: IMCI training; donation of time by professors; audio visual materials and equipment; medical supplies; and use of hospital facilities for hands-on training activities.

6.3 Management and Use of Data

As previously discussed, although the PLAN Austro Health Team received technical assistance regarding the use of Epi Info for processing the HIS indicators and for the purposes of an anthropometric study, most team members are still not fully versed in the use of the software. When Brian Johnson visited the project last September, he spent most of his time with the former Administrative Assistant. Since then a new Assistant has been hired, who then received help from Dr. Valadez in the management of Epi Info, during his second visit earlier this year; however, more training is advisable. During the time of the Final Evaluation, it was not possible to compare the process indicators over the last few months, due to the ongoing problems with the use of the software.

6.4 Human Resources

The new staffing situation for the PLAN Austro Health Team has permitted the project to make excellent progress toward its objectives. However, now that financing from USAID has ended, some changes have been contemplated. The Project Coordinator is considering seconding both the Nurse/Manager and the Education Advisor to Cuenca University, where they would work on educational programs to support project activities. The four Nurse Supervisors would be seconded to different MOH Sub-Centers, where they would continue to promote the four child survival interventions, reproductive health and child-to-child. The idea is that PLAN Austro would continue to pay their salaries; however, they would answer directly to their immediate superiors at their new place of work. Monthly meeting with the PLAN Health Coordinator and Administrative Assistant would ensure progress toward project objectives. Formal agreements made with the University of Cuenca and the MOH would stipulate the conditions regarding the employment of the former PLAN Austro Health Team. This strategy is innovative and has implications for sustainability, if the other institutions can eventually take over the salaries and continue to foster project interventions.

6.5 Recommendations

1. A reproductive health component will be added to the interventions offered by the CS Project during the coming year. It is recommended that the new intervention be phased in gradually, once the original interventions are mature. Care should be taken to not overload the CHW with too many duties, therefore other community members could be considered as volunteers for reproductive health. In another PLAN project, each

community has a CHW, and a male and female reproductive health volunteer who are trained to counsel men and women respectively.

2. As recommended in Chapter 5, an intern should to better organize the Epi Info HIS system, and fully train the key staff. One possibility is an offer of Dr. Valadez, of PLAN IH, to help recruit an intern from Johns Hopkins University or Harvard University to work with PLAN Austro for a designated period of time. The PLAN Ecuador Health Coordinator should keep abreast of the recruiting process and make the necessary arrangements.
3. An additional activity for the intern could be to undertake a study to determine the factors which impede close to half (47.3 %) of the target population from participating in the bimonthly growth monitoring sessions.
4. PLAN Austro should continue to strengthen inter-institutional collaboration and explore ways to expand the interchange of services to further improve child survival and other health benefits for rural populations. Specific recommendations include:
 - a) Hold a workshop for new MOH employees to make them aware of the goals and strategies of the CS Project, and to facilitate the transfer of activities to the MOH.
 - b) Explore collaborative relationships with other agencies which are working in health, in addition to the MOH, due to the fact that there is often instability due to political factors and strikes within the ministry.
 - c) Extend pilot programs, such as the one currently implemented by the project for training and supply of CHWs for pneumonia control with antibiotics in remote regions, to other geographical areas.
 - d) Continually improve the system used to supervise the registration of health data, use of child health cards, and other information at the community level.
5. Regarding human resources, the evaluators recommend that the Nurse/Manager support the field work with the MOH Sub-Centers rather than be assigned to the University of Cuenca, because the project already has one less Nurse Supervisor as Lucia Ortiz left in September of this year. With two new initiatives--reproductive health and child-to-child--assigned to the Nurse Supervisors, plus the four CS interventions, it is doubtful that the four remaining nurses can cover the geographic area contemplated for this next year.
6. Due to the innovative nature of the new staff arrangement, it is recommended that the project document the process and publish the findings, if the procedure turns out to be successful in terms of transferring activities to other institutions and fostering sustainability of project benefits.

7 INNOVATIONS AND LESSONS

7.1 Innovations

Innovations during the PLAN Austro Child Survival Grant include the placement of project staff in positions at the MOH and the local university, for the purpose of strengthening the relationship between PLAN and these institutions and fostering the transfer of knowledge, skills and strategies developed by the project. Another innovation was a board game named LUDO: the game is used with community members and helps them learn about CS interventions; it is fun to play and has evoked much interest in learning new things about health. Additional focuses for the CS Project have been the Child-to-Child program approach, and the incorporation of the IMCI modules. PLAN Austro will continue to link health interventions with the education of school children and develop new ways to teach children about health.

7.2 Lessons

1. The project design should not include more communities than the project management can handle, taking into consideration human resources and the project budget.
2. In order for the project to be efficient and effective, activities should be in accordance with both national and international health strategies.
3. Win-win negotiations are important if inter-institutional collaboration is to be successful, including dealing with the MOH.
4. Continual supervision and technical assistance from PLAN Health Advisors at the country, regional and international level, has a great impact on the success of the project.
5. Transference of project benefits to the MOH takes place through continuous follow-up and support.
6. Child Survival Projects should be launched with a workshop for the purpose of clarifying goals, strategies, time-lines, and other important aspects.

8 ACHIEVEMENTS AND CONSTRAINTS

8.1 Achievements

The PLAN Austro Health Team has come a long way towards achieving their goals during the life of the project. One of the most important achievements is the development of a strong health team, whose members are dedicated, hard working, sincere and inspired. The quality of the human resources in this project is exemplary, and the key factor in the success of the project. At the time of the Mid-Term Evaluation the team members were faced with a great challenge: expand all four interventions from 20 to 130 communities and lay a firm groundwork for the management systems to support them. A rigorous Plan of Action was developed during the MTE and strictly followed by the Health Team during the past 14 months. The evaluators commend the Team for their diligence in following the Action Plan, which resulted in the successful expansion of child survival activities to all 130 communities.

The PLAN Austro Health Team feels that their level of self-assurance has increased substantially since the project began in 1994. The Team is more critical of their own strengths and weaknesses. They have learned to focus on more concrete and specific actions, and have become more directed toward fulfilling the project's goals. Members of the staff now take time to learn before running "full steam ahead" without proper organization and planning. Team members say that instead of overestimating their strengths, they should exercise humility, work hard, and spend at least 50% of their time in the communities with the people. And whenever obstacles appear, one should not become discouraged, but rather find out what is needed and provide it, in order to move the action forward.

Specific achievements of each intervention strategy are outlined in Chapter 5.

8.2 Constraints

The main constraints faced by the project were an overly ambitious project design, and a new health team with little or no previous experience in the management of a child survival project. The project design called for the implementation of four child survival interventions in 147 rural communities. The communities are dispersed, some of the most distant require a three hour car trip plus an hour hike to reach. The Health Coordinator was relatively new at the time the project proposal was submitted, and all the staff were hired once the grant was approved by USAID.

Specific constraints regarding each of the interventions are discussed in Chapter 5.

ANNEX B

USAID FINAL EVALUATION GUIDELINES



U. S. AGENCY FOR
INTERNATIONAL
DEVELOPMENT

AUG 26 1997

Re: Guidelines for Final Evaluation of PVO Child Survival
Projects Ending in 1997

Dear Colleague,

Enclosed are guidelines for the final evaluation of PVO child survival projects ending in 1997.

If you have started an evaluation based on the guidelines for projects ending in 1996, then you may continue to follow these. BHR/PVC concurrence for the scope of work is not required for evaluations which follow PVC guidelines. PVOs may wish to develop their own guidelines with BHR/PVC concurrence prior to the evaluation.

A single-sided unbound original, and one bound double-sided copy of the report, should reach BHR/PVC within 90 days of the end of the project. An additional copy should also be sent to JHU-CSSP (103 E. Mt. Royal Ave., Room 2C, Baltimore, MD 21202).

Please do not hesitate to call your Technical Advisor or Program Officer at BHR/PVC for further information concerning final evaluations.

Sincerely,

Katherine Jones
Chief, Child Survival and Health
Office of Private and Voluntary Cooperation
Bureau for Humanitarian Response

**GUIDELINES FOR FINAL EVALUATION
OF PVO CHILD SURVIVAL PROJECTS
ENDING IN 1997**

PVO Child Survival Grants Program
USAID/BHR/PVC
August 22, 1997

Purpose of the Final Evaluation

The purposes of the final evaluation are to assess, the achievement of project objectives, explore reasons for not meeting objectives, assess improvements in the capacity of partners to effectively plan and implement child survival activities, examine sustainability of project activities or benefits, and acknowledge the achievements of the project and staff.

The evaluation shall include a final survey, using the same methods and questions, and sampling from the same population, as the baseline survey. The evaluation report should discuss final evaluation findings in relation to the plans and objectives outlined in the project's approved DIP, the findings of the baseline survey and the mid-term evaluation, information from the project's annual reports, and relevant data from other surveys, studies, or health information systems of the project, country (ie., DHS), and/or of other health providers in the area. Recommendations from the final evaluation should help PVOs to design and implement effective child survival projects in the future.

Issues Identified by Evaluation Team, Project, or PVO (Section 6)

PVOs may use the opportunity of the final evaluation to explore issues raised by project staff or partners, re-examine any concerns raised in the mid-term evaluation, or investigate any unexpected findings of the final survey. Projects which will continue after this evaluation may want to examine the process of project implementation and quality of services, and make recommendations for the next phase of implementation. The evaluation team may choose to assess essential knowledge, skills, practices, and supplies of selected individual health workers and health facilities, or community views concerning the quality of child survival services.

Composition of the Final Evaluation Team

BHR/PVC encourages the participation of project staff and representatives from project partners and stakeholders in planning and conducting the evaluation, including PVO country office and headquarters, government health services, NGOs, and community members. However, the evaluation team leader, who should serve as principal author of the evaluation report, should be someone who is not employed by, or otherwise professionally associated with the concerned PVO or child survival project. This person must have relevant field experience in public health, and be approved by BHR/PVC prior to the evaluation.

The final evaluation should address each of the following issues. If any of these issues are not covered by the evaluation, then please explain why the issue is not applicable or is not addressed.

1. Summary and Recommendations

Summarize the highlights of the final evaluation, including:

- (a) Evaluation methods, sites visited, and dates of field work,
- (b) Main "Achievements and Constraints" of the project (from section 8, below),
- (c) Main conclusions regarding "Capacity Building and Sustainability" (from section 4), and
- (d) Main conclusions regarding the success of the project in meeting its objectives (from sections 5 and 8).

Present the recommendations of the evaluation. For each recommendation:

- (e) Discuss the problem or concern identified by the evaluation,
- (f) Recommend the action(s) to **be** taken,
- (g) Identify the organization(s) which should implement the recommended action (project, PVO headquarters, BHR/PVC), and
- (h) Suggest the date by which the recommended action should be implemented.

2. Project Background

- (a) Please state the date when child survival activities funded by BHR/PVC first started at this site, if different from the effective date of the Cooperative Agreement.

* To make the report of the final evaluation a "stand-alone" document that may be understood by those who have not read the DIP, points (b), (c), and (d) below may be addressed by copying the following sections from the approved DIP: Tables A and B, "Location Description", "Summary of Overall Program Design", and "Collaboration and Formal Agreements."

- * (b) Provide the number of children under five served by the project, and list the project's interventions, objectives, planned inputs and outputs, as stated in the approved DIP. (Describe any substantial changes in the project's beneficiary population, interventions, or objectives, since the time of the DIP, and the reasons for these changes.)
- * (c) Briefly describe the project site and population, and the area's health infrastructure and health services. (Describe any substantial changes in the project's site, from the site described in the DIP, and the reasons **for** this change.)
- * (d) Summarize the project design, and briefly describe the planned nature of collaboration with other organizations, as stated in the DIP. (Describe any substantial changes in the project's principal partners, since the time of the DIP, and the reasons for this change.)

3. Recommendations of the Mid-Term Evaluation

Discuss how the project addressed the recommendations of the mid-term evaluation (without repeating what was reported in the Third Annual Report.)

4. Capacity Building and Sustainability

- (a) Describe the relationship of this project to other health-related activities in the project area (of this and other PVOs, NGOs, private and traditional health providers, and government), including health facilities and referral care sites, and linkages between these facilities and the communities served by the project.
- (b) Briefly describe what is expected to happen with project activities after the end of this cycle of funding from BHR/PVC. Which organizations does the project expect to take part in sustaining project activities or benefits?

- (c) Describe how the project increased the capacities of local partners to implement child survival activities? What is the current ability of MOH, NGO, or other partners to provide the necessary financial, human, and material resources to sustain effective project activities once BHR/PVC funding ends? Have major project responsibilities and control been phased-over to local organizations?
- (d) How did communities participate in the design, implementation, and evaluation of the child survival project? Do community members see this project as effective, and is there demand in the communities for project activities to continue? What activities did the project carry out to enable communities to better meet their basic health needs and increase their ability to sustain effective child survival activities? How has the project measured the result of these activities? What resources have communities contributed, and what will they continue to contribute, to encourage continuation of project activities?
- (e) What specific cost-recovery activities (i.e., revenue generating measures, such as sale of pharmaceuticals), if any, did the project implement? Did these activities generate enough money to justify the effort required to implement these activities? Did the cost recovery activities affect equity in service delivery?
- (f) Please complete a table (example below) describing the project's plans and achievements in increasing the capacities of partner organizations and promoting the sustainability of child survival activities and/or benefits.

SAMPLE TABLE: Capacity Building and Sustainability Plans and Outcomes

Goal (from DIP)	End-of-project objectives (DIP)	Steps taken to date	Outcomes
A) MOH will take on health promotive activities of CS project	1) MOH supervises and gives refresher training to 50 CHVS 2) Health Officer meets monthly with community health committees	1) 2 MOH nurses trained in CHV supervisory methods 2) HO's role re. health committee meetings approved by district health office	1) 40 CHVs being supervised by MOH nurses (80% of objective) 2) Health Officer attends average of 7/10 monthly meetings (70% of obj.)
B)			

5. Presentation and Discussion of Final Survey Findings

- (a) Present the findings of the final survey. Include a table with the following information on indicators/objectives:

indicator values from the baseline survey
(numerators/denominators, and percentages),

indicator objectives from the **DIP** (please write out the entire objectives as stated in **the DIP**), and

indicator values from the final survey
(numerators/denominators, and percentages).

- (b) Discuss the results of the final survey in relation to the results of the baseline survey and objectives set in the DIP, and in relation to other relevant information (such as findings of the mid-term evaluation, information from annual reports, and data from other surveys, studies, or health information systems of the project, country, and/or of other health providers in the area). Discuss alternative explanations for the findings of the final survey.

(Please refer to the annex below for guidance on the interpretation of survey results.)

- (c) If the project's **DIP included** other objectives (in addition to those estimated by the final survey or discussed in the "Capacity Building and Sustainability" section, above), describe the achievement of these other objectives.

6. Issues Identified by Evaluation Team, Project, or PVO

Please discuss any other issues addressed by the evaluation (such as any assessments conducted by the evaluation team relating to unexpected findings of the final survey, quality of child survival services, successes and difficulties in implementing specific interventions or strategies, or concerns raised in the project's mid-term evaluation).

7. Innovations and Lessons

- (a) Describe any innovations, new methods, strategies, or materials developed or used by the project, which may be applicable on a wider scale, or beneficial in other areas or programs. What actions have been taken to insure that others learn about these innovations?
- (b) Discuss any lessons learned regarding the project which are applicable to other PVO CS projects or relevant to USAID's support of these projects.

8. Achievements **and** Constraints

- (a) Discuss your conclusions regarding the success of the project in meeting its objectives.
- (b) Describe the most important achievements of this project. Which interventions and strategies did the project implement successfully? What factors contributed the most toward these achievements?
- (c) Which interventions and strategies did the project have difficulty implementing successfully? What factors impeded the achievement of success, and what actions were taken by the project to overcome these constraints?

APPENDICES

- I. Identify by name, title, and institutional affiliation, all members of the final evaluation team, and all authors and editors of the evaluation report. Include the resume/CV of the evaluation team leader.
- II. Describe the methods used for the project's final survey and include the survey questionnaires.
- III. Attach a copy of the summary and recommendations section of the report of the project's mid-term evaluation.

OPTIONAL:

- IV. Please include one page "success stories" related to the project which BHR/PVC may use as examples in documenting the achievements of the PVO Child Survival Grants Program. (This is optional.)
- V. Please provide any suggestions for improving these final evaluation guidelines. (This is optional.)

ANNEX

Interpretation of Survey Findings

Survey findings regarding individual indicators or objectives should only be considered estimates of true values. The survey sample size, small numbers for some indicator denominators, cluster sampling methodology, and other non-sampling errors, may result in imprecise estimates of individual indicator values. Thus, in some cases, specific objectives may have been met, even though survey findings suggest otherwise. For this reason, assessments of final survey findings in relation to objectives and findings from the baseline survey, should include comparisons across all indicators or groups of related indicators, in addition to comparisons involving individual indicators. For example, conclusions with regard to project achievements in raising measles immunization coverage should be based on comparisons of all immunization indicators, as well as on differences between baseline and final survey indicator values for measles alone.

Substantial change (or lack of change) between baseline and final survey values for most indicators, or success (or failure) in achieving most objectives, may be interpreted as evidence which supports a conclusion, but should not be considered confirmation of project "impact" (or failure to achieve impact). Survey findings may reflect external events unrelated to project activities, and limitations in survey design or implementation (such as bias in selection of respondents, or respondents' misunderstandings of survey questions, recall errors, or desires to please interviewers). Thus, the final evaluation should compare the findings of the final survey to other relevant information, and consider plausible alternative causes for the observed results.

BHR/PVC realizes that projects may not meet all of their objectives. Thus, although survey findings are used to document the achievements of the PVO Child Survival Grants Program as a whole, BHR/PVC does not base future funding decisions on survey results.

Optional Statistical Analysis

Statistical analysis of survey findings is a purely optional activity that evaluation teams or PVOs may find helpful in interpreting results. However, it may not be useful to conduct statistical tests of the differences in specific indicator values between baseline and final surveys when sample sizes are small. The consistency of survey findings across related indicators, the consistency of survey findings with other relevant information, and an assessment of alternative explanations for survey findings, are more important for interpreting results and drawing conclusions.

Formulas for determining statistical significance or confidence intervals based on "simple random sampling" will yield inaccurate statistics for data from surveys using cluster sampling. Thus, PVOs with experience using EpiInfo version 6 may wish to determine confidence intervals for indicator values using the "Csample" function. This requires individual records for each respondent (survey form) to be entered with a cluster identifier for each record.

If the 90% confidence interval of a final survey indicator value overlaps with the value of the DIP objective for the same indicator, then this is statistical evidence that the objective was met (even if the survey value is lower!). If the survey value is greater than the objective, and the confidence interval does not overlap with the objective, then this is strong statistical evidence for achievement of the objective.

The statistical significance of the differences between the baseline and final survey values for individual indicators can be computed if cluster identifier information is available for both baseline and final surveys (or estimated, if the "design effect" for a specific indicator from the final survey is used as an estimate for the design effect for the same indicator in the baseline survey). However, for indicators with denominators substantially less than 200 to 300, differences between surveys are unlikely to reach statistical significance, unless these differences are large (ie., 20% or more for 90% confidence intervals and design effects of 2.0).

(cs\docs\final.97)